

2/2 019

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118983

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROCEDURE IS EXPLAINED OF THE BUTT WELDING OF BIMETALLIC PIPES FABRICATED FROM STEEL 10 PLUS COPPER M2S WITH A NONFERROUS ADDITION OF BRONZE BR.OTS 4-3 OR BR.MNZHKT 5-1-0.2-0.2 WHICH ENSURES SATISFACTORY MECHANICAL AND CORROSION PROPERTIES OF THE WELDED JOINT. FACILITY: FAR EASTERN POLYTECHNIC INSTITUTE IMENI V. V. KUYBYSHEV.

UNCLASSIFIED

USSR

I

UDC 621.791.7.011:62-462:669-419.4

BAKHTEROV, YU. G., Engineer, ISACHENKO, V. I., Candidate of Technical Sciences

"Features of the Technology of Welding Butt Joints of Bimetallic Tubes"

Moscow, Svarochnoye Proizvodstvo, No 1, Jan 70, pp 19-21

Abstract: The feasibility of welding bimetallic tubes with bronze filler wire was investigated. Steel tubes (6--55 mm outside diameter), internally clad with copper, were used in the experiment. The ends of the tubes were prepared by removing some of the steel layer so that about 1.5--2 mm of the copper layer was exposed at the butt end of each tube. The steel layer was beveled at the ends for welding. The prepared ends were butted together, leaving a 0--0.3 mm gap between them. Both layers, copper and steel, were welded simultaneously by manual TIG welding with EMts 3-1, OTs 4-3, or MNZhKT 5-1-0.2-0.2 bronze filler wire. The best mechanical properties of welds were obtained with OTs 4-3 and MNZhKT 5-1-0.2-0.2 filler wires. Corrosion tests revealed that the corrosion resistance of the welds and 1/1 weld-adjacent zone was as high as that of the parent metal.

Forming

USSR

UDC: 621.73.043:621.98

ISACHENKOV, YE. I.

"Present State and Prospects for the Development of Cold Stamping and Swaging"

Moscow, Kuznechno-shtampovochnoye proizvodstvo, No 1, Jan 72, pp 3-6

Abstract: A brief review is presented of the state of the arts and various aspects of plastic working of metals in the USSR including the economical and technical factors of both tooling and manufacture. A classification is shown of various stamping techniques as a function of the semifinished product and forming temperatures. The sheet metal stamping techniques include both cold and hot close impression die forging. The current problems facing the sheet metal stamping sector of the machine construction industry, include explosive stamping, stamping with elastic and liquid media, stamping in a high-pressure hydrostatic field, hydromechanical magnetomechanical, electrohydraulic pulse shaping, friction stamping, and variable temperature-field stamping. In close impression die forging the principal problems are related to both hot and cold impact extrusion, intricate shaping, hot and cold roll forming of intricate shapes, precision forming in removable dies,

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USSR

ISACHENKOV, YE. I., Kuznechno-shtampovoye proizvodstvo, No 1, Jan 72,  
pp 3-6

application of protective glass-base lubricants for maximum utilization of heating equipment, maintaining top quality production at minimum waste. It is suggested that these and other priority problems be solved on the basis of technical and economical optimization with maximum utilization of computer technology. (3 tables).

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- 10 -

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ROLE OF CYCLOHEXANE IN THE DEHYDROCYCLIZATION OF N-HEXANE ON A  
CHROMIUM CATALYST -U-  
AUTHOR-(05)-ISAGULYANTS, G.V., ROZENGART, M.I., DERBENTSEV, YU.I.,  
DUBINSKIY, YU.G., KAZANSKIY, B.A.  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(3), 600-2  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CYCLOHEXANE, HEXANE, CARBON ISOTOPE, CATALYST, BENZENE,  
CATALYTIC CRACKING, HEXENE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/1079 STEP NO--UR/0020/70/191/003/0000/0001  
CIRC ACCESSION NO--AT0124736  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--300070

CIRC ACCESSION NO--AT0124736

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. A FLOW METHOD WAS USED TO ANALYZE THE REACTION PRODUCTS OF HEXANE CYCLOHEXANE (TAGGED WITH PRIME14 C2 AT 530DEGREES ON AN ALUMINOSILICATE CATALYST. THE CRACKING PRODUCTS WERE ISOHEXANES, HEXANE, HEXENES, CYCLOHEXANE, AND C SUB6 H SUB6; IT WAS SHOWN THAT CYCLOHEXANE IS NOT FORMED IN THE OVERALL PROCESS AND CANNOT BE AN INTERMEDIATE IN DEHYDROCYCLIZATION OF HEXANE TO C SUB6 H SUB6. C SUB6 H SUB6 IS FORMED FROM CYCLOHEXANE SOMEWHAT MORE RAPIDLY THAN IT IS FROM HEXANE. THE ADSORPTION COEFFS. OF CYCLOHEXANE AND HEXANE ON THE CATALYST APPEAR TO BE VERY SIMILAR. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--MECHANISM OF CARBON DIOXIDE FORMATION IN THE OXIDATIVE  
DEHYDROGENATION OF ETHYLBENZENE TO STYRENE -U-  
AUTHOR-(04)-ISAGULYANTS, G.V., BOGDANOVA, O.K., BELOMESTNYKH, I.P.,  
ROZHDESTVENSKAYA, N.N.  
COUNTRY OF INFO--USSR

SOURCE--NEFTEKHIMIYA 1970, 10(2), 174-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--CARBON DIOXIDE, DEHYDROGENATION, ETHYLEBENZENE, STYRENE,  
CARBON ISOTOPE, OXIDATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0959

STEP NO--UR/0204/70/010/002/0174/0177

CIRC ACCESSION NO--AP0134677

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0134677

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE MECHANISM WAS STUDIED BY THE KINETIC ISOTOPE METHOD, USING STYRENE (I), PRIME14 C. I WAS THE ONLY PRECURSOR OF CO SUB2. THE CATALYST MGO, (NH SUB4) SUB2, MOO SUB4 HAD HIGH SELECTIVITY FOR THYOXIDATIVE DEHYDROGENATION OF ETPH TO I.  
FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED



USSR

UDC 547.621:661.718.1/.719:542.953

ISAGULYANTS, V. I., PARFENOVA, V. A., and ROCHEVA, G. YA., Moscow Institute of Petrochemical and Gas Industry Imeni Akademika I. M. Gubkin

"Synthesis of O,O-Di-(alkylphenyl)-N-alkylamidothiophosphates"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 45, No 6, Jan 72, pp 1404-1406

Abstract: A mixture of 9.9 g O,O-di-(p-tert-butylphenyl)-thiophosphoryl chloride, 1.47 g n-propylamine, and 2 g pyridine in anhydrous benzene was heated to 60° with constant stirring under an atmosphere of nitrogen for 5 hrs. After cooling, pyridine hydrochloride was filtered off and benzene was removed under reduced pressure to yield O,O-di-(p-tert-butylphenyl)-N-n-propylamidothiophosphate. Analogously the following compounds were obtained: O,O-di-(p-tert-butylphenyl)-N-n-butyl-, and -n-amyamidothiophosphate and O,O-di-(octylphenyl)-N-propyl-, -isobutyl-, -n-butyl-, -n-amy-, and -n-hexylamidothiophosphate.

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USSR

UDC 547.566.66.095.25

ISAGULYANTS, V. I., GOZALOVA, N. S., and CHURSINA, N. A.

"Condensation of Phenol with Cinnamyl Alcohol in Presence of Cation Exchange Resin KU-2"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 9, Sep 71, pp 1960-1962

Abstract: A mixture of 141 g phenol, 100.5 g cinnamyl alcohol, and 24.15 g KU-2 was stirred for 5 hrs at 60°. The solid was separated and 90 g of phenol was distilled. The residue was treated with 10% aqueous base and distilled. The first fraction obtained boiled at 200-215°/10 mm, the second -- at 185-200°/10 mm, and the third had a b.p. 220-255°/4 mm. After recrystallization from petroleum ether p-cinnamylphenol, m.p. 63° was obtained from the first fraction. 2-Phenylchromane, m.p. 43° was obtained from the second fraction, and 2,6-dicinnamylphenol, m.p. 126° was obtained from the third. After separation on an alumina column of a mixture of o- and p-isomers, the o-cinnamylphenol, m.p. 67° was obtained.

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Ion Exchange

UDC 547.841

USSR

ISAGULYANTS, V. I., MELIKYAN, V. R., and NGUYEN MAN' KHUNG

"Condensation of Alpha-Chlorostyrene with Paraformaldehyde on the Cation Exchange Resin KU-2"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 9, Sep 71, pp 1794-1795

Abstract: The reaction of alpha-chlorostyrene with paraformaldehyde was studied using KU-2 as the catalyst. Using a ratio of 1:2 of alpha-chlorostyrene:formaldehyde yields beta-chloro-beta-phenylpropionaldehyde and 4-chloro-4-phenyl-1,2-dioxane. When the above ratio is changed to 1:4, the only product obtained is 4-chloro-4-phenyl-1,3-dioxane. The reaction was carried out at 95-100° by adding alpha-chlorostyrene to a mixture of formaldehyde and KU-2.

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Petroleum Processing Technology

UDC 665.521.5

USSR

ISAGULYANTS, V. I., BOLOTOVA, G. I., Moscow Institute of the Petrochemical and Gas Industry imeni I. M. Gubkin

"Ashless Lubricating-oil Antioxidant Additives Based on Diesterodithiophosphoric Acids"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 43, No 4, Apr 70, pp 925-926

Abstract: Research has been begun in the field of sulfur-, phosphorus- and nitrogen-containing compounds for purposes of finding new ashless lubricating-oil additives possessing high antioxidant and anticorrosive properties. O,O-Dialkyl- and O,O-di(alkylaryl)-S-carbamoylmethyl dithiophosphates with the general formula  $(RO)_2PSSCH_2CONH_2$  have been synthesized by the interaction of potassium salts of dithiophosphoric acids with monochloroacetamide. Preliminary tests of the resultant compounds with MT-16 oil show that they have good antioxidant properties.

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Acc. Nr:

AP0053745

Abstracting Service:

CHEMICAL ABST.

ISAGULYANTS V.I

Ref. Code:

6/10 4R 0080

111128d Alkylation of phenol by indene in the presence of KU-2 cation exchanger. Isagulyants, V. I.; Lyubova, T. A. (USSR). *Zh. Prikl. Khim. (Leningrad)* 1970, 43(1), 192-4 (Russ). The alkylation of PhOH (I) by indene (II) and by an indene-rich fraction of heavy  $C_6H_6$  (sic) from coking of coal (the fraction contained 72.5% II) was investigated in the presence of the cation exchanger KU-2 (III). I (0.32 mole) and 0.15 mole of II or II-rich fraction at 60-140° in the presence of 5-30% wt. III gave 50-80% of a mixt. (IV) of *o*- and *p*-(1-indanyl)phenol,  $b_p$  198-200°, m. 93-4°; benzoate, m. 109°. In the presence of 5% III and at the temp. 120-40°, the yield of IV after 4 hr was 70-85%. An increase of the I-II ratio increased the yield of IV by 7-10% whereas an increase of the amt. of III did not. No diindanylphenols were formed. C. Parkanyi

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REEL/FRA  
19830806

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172 008 UNCLASSIFIED PROCESSING DATE--ZUNOV70  
TITLE--USE OF ION EXCHANGE RESINS IN CATALYSIS. PRODUCTS OF THE ALKYLATION  
OF PHENOL BY INDENE AND AN INDENE CONTAINING FRACTION IN THE PRESENCE OF  
AUTHOR--(02)--LYUBOVA, T.A., ISAGULYANTS, V.I.

COUNTRY OF INFO--USSR

SOURCE--ZP. PRIKL. KHIM. (LENINGRAD) 1970, 43(5), 1189-91

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ION EXCHANGE RESIN, ALKYLPHENOL, POLYNUCLEAR HYDROCARBON,  
CATALYST ACTIVITY/(U)K02 ION EXCHANGE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1952

STEP NO--UR/0080/70/043/005/1189/1191

CIRC ACCESSION NO--AP0132213

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132213

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE TITLE REACTION GAVE A 1:2.2

MIXT. OF I, P. 72DEGREES, AND II, M. 94DEGREES.

UNCLASSIFIED

006 UNCLASSIFIED PROCESSING DATE--27NDV70  
TITLE--ALKYLATION OF PHENOL BY ISOBUTYL ALCOHOL ON THE MACROPOROUS CATION  
EXCHANGER KU,2-12P -U-  
AUTHOR-(05)-ISAGULYANTS, V.I., MELIKYAN, V.R., GUZIK, V.S., DVORTSOVA,  
V.N., SUKHANOVA, N.A.  
COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(5), 389

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKYLATION, PHENOL, BUTANOL, CATION EXCHANGE RESIN/(U)KU2 12P  
ION EXCHANGE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3008/0883

STEP NO--UR/0064/70/046/005/0389/0389

CIRC ACCESSION NO--AP0137911

UNCLASSIFIED



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UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137911

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE ALKYLATION OF PHOH BY ISO, BUOH, THE CATALYTIC ACTIVITY OF THE MACROPOROUS CATION EXCHANGER KU,2-12P (STATIC EXCHANGE CAPACITY 4.85 MG EQUIV.-G, SP. SURFACE 30-40 M PRIME2-G, AND PARTICLE SIZE 0.355-2.0 MM) WAS CLOSE TO THAT OF THE UNMODIFIED RESIN KU,2-8 FROM WHICH IT WAS DERIVED. AT 150DEGREES WITH 30PERCENT KU,2-12P AND A PHOH ALC. RATIO OF 1:0.8, THE PRODUCT MIXT. CONTAINED 32PERCENT PHOH, 3PERCENT O AND 65PERCENT P,TERT,BUC SUB6 H SUB4 OH.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--ASH FREE ANTIOXIDANT ADDITIVES TO LUBRICATING OILS BASED ON  
DITHIOPHOSPHORIC ACID DIESTERS -U-  
AUTHOR-(02)-ISAGULYANTS, V.I., BOLOTOVA, G.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 925-6

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--ANTIOXIDANT ADDITIVE, LUBRICATING OIL, PHOSPHORIC ACID,  
PHOSPHATE ESTER, LUBRICANT ADDITIVE, AMINE DERIVATIVE, ORGANIC SULFUR  
COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3001/2224

STEP NO--UR/0080/70/043/004/0925/0926

CIRC ACCESSION NO--AP0127586

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0127586

ABSTRACT/EXTRACT--(U) GP-Q- ABSTRACT. THE REACTION OF (RO) SUB2 PSSK WITH CLCH SUB2 CONH SUB2 GAVE (RO) SUB2 PSSCH SUB2 CONH SUB2 (R EQUALS ALIPHATIC OR AROMATIC HYDROCARBONS IN THE RANGE OF C SUB7-19. THESE COMPS. WERE TESTED AS ANTIOXIDANTS IN LUBRICATING OILS. FACILITY: MOSK. INST. NEFTEKHIM. GAZOV. PROM. IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 577.1:615.7/9

BABANOV, G. P., ISAKHANOV, A. L., BUROV, YU. A., SKOBEY, N. A., BABANOV, A. G.  
and SAVRASOVA, L. I.

"Formation of the Adaptation of the Organism Under the Effect of Nitrile'  
Acrylate as a Low-Intensity Factor of the Production Environment"

V sb. Toksikol. i gigyena produktov neftekhimii i neftekhim. proiz-v (Toxicology  
and Hygiene of the Products of Petrochemistry and the Petrochemical Production  
-- collection of works), Yaroslavl', 1972, pp 45-58 (from RZh-Biologicheskaya  
Khimiya, No 8, 1973, Abstract No 8F2171)

Translation: Rats were forced to inhale nitrile acrylate for 6 months (I;  
 $0.495 \pm 0.01 \text{ mg/m}^3$ , 5 hours a day, 6 days a week). The I treatment caused some  
increase in the number of erythrocytes in the blood (more expressed only  
during the first month of treatment) and a reduction in the number of leuco-  
cytes (more expressed after 4-5 months), an increase in the total amount of  
protein in the blood serum as a result of albumen and from the second half of  
the effect of I -- gamma-globulins -- an increase in the free SH-group content  
in the liver (during the initial period of the treatment) and to a lesser  
degree in the blood serum and a reduction in the ascorbic acid content in the  
blood serum and also some increase in the activity of the blood peroxylase and  
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USSR

BABANOV, G. P., et al., Toxicology and Hygiene of the Products of Petrochemistry and the Petrochemical Production -- collection of works, Yaroslavl', 1972, pp 45-58

catalase. In the second half of the treatment, the changed indexes increased to the initial level. The treatment with I caused increase resistance to the animals to the effect of extremal factors (temperature drops --  $+5^{\circ}$ , 10 minutes; reduced  $O_2$  partial pressure, ethanol narcosis -- 3 g/kg, intraperitoneal). Under the acute effect of I (183 mg/m<sup>3</sup>, 2 hours) the changes in the majority of investigated indexes were insignificant. The conclusion was drawn regarding development of adaptation of the organism under the effect of low I concentrations.

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U S S R

B O O K

3 5 5

ISAKHANOV, G. V.

PROCHNOST' NEMETALLICHESKIKH MATERIALOV PRI NERAVNOMERNOM NAGREVE (Strength of Nonmetallic Materials Under Nonuniform Loading), Kiev "Naukova Dumka", 1971, 180 pp, illus, biblio, 1,500 copies printed

Considers the general problems associated with the study of the strength characteristics and bearing capacity of nonmetallic materials and structural elements subjected to unidirectional heating and rapid thermal cycling. Original methods and equipment are described; test data are given on the strength characteristics of reinforced plastics, silicates, organic materials and heat-resistant coatings under nonuniform heating. Methods of determining the thermal stability of reinforced plastics under unidirectional heating are analyzed.

The book is intended as an aid to scientific and technical personnel engaged in the solution of thermal stability problems.

Foreword . . . . .	3
Chapter I. Mechanical Properties of Nonmetallic Materials Under Rapid Heating and Loading . . . . .	5
Chapter II. Special Features of Thermomechanical Testing of Non-metallic Materials Under Nonuniform Heating. . . . .	27

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USSR

ISAKHANOV, G. V., PROCHNOST' NEMETALLICHESKIKH MATERIALOV PRI NERAVNOMERNOM NAGREVE (Strength of Nonmetallic Materials Under Nonuniform Loading), Kiev, 1971, 180 pp

Chapter III. Methods and Equipment For Studying the Bearing Capacity of Nonmetallic Materials and Structural Elements Under Intensive Unidirectional Heating . . . . .	45
Chapter IV. The Mechanism of Weakening of Structural Glass Plastics During Unidirectional Heating Under Boundary Conditions of the First Type . . . . .	95
Chapter V. The Bearing Capacity of Glass Plastics During Unidirectional Intensive Heating Under Boundary Conditions of the Second Type . . . . .	108
Chapter VI. The Thermal Stability of Refractories . . . . .	145

AA0052625

ISAKHANOV G.V.

UR 0482

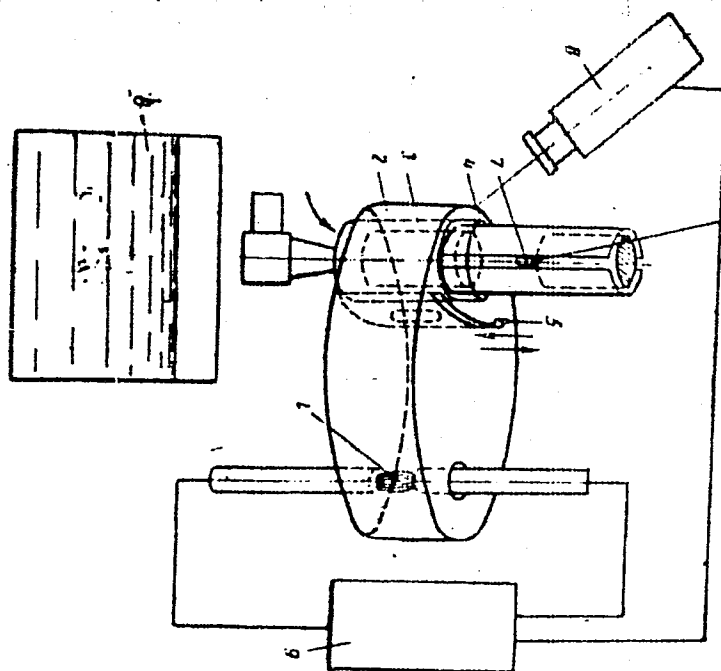
Soviet Inventions Illustrated, Section I Chemical, Derwent,  
2416/4 HEATING SYSTEM reduces heating time,  
produces a required thickness of the  
hardened layer and permits local hardening. It  
consists of a heat source 1 and a body 2 which  
focuses the heat energy on to the product mounted  
inside a quartz tube 3. The body is in the form  
of an elliptical cylinder with end covers 4. It  
is water cooled and mirror polished inside. For  
local heating a suitably cut-out screen 5 is pos-  
itioned between the source and the product. Quen-  
ching bath 6, mechanism 7 for feeding and dischar-  
ging product into the bath, the temperature sen-  
sor 8 and the light heat controller 9 complete the  
installation. When the correct temperature is  
reached, the product is discharged automatically  
into the bath and the heat source is switched off.  
The heat source can be a super high tension arc  
lamp of 10 KWT. 2/70

22.1.68 as 1213610/22-1 G.V. ISAKHANOV et al.  
Strength Problems Inst. Acad. Sciences Ukrainian  
SSR (29.9.69) Bul. 14/18.4.69. Class 18c, Int.  
Cl. C 21d. i/3

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Isakhanov, G. V.; Lyashenko, B. A.; Eskin, E. A.; Rodichev, Yu. M  
Institut Problem Prochnosti AN Ukrainskoy SSR

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19821334

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--CERTAIN REGULARITIES OF THE STRENGTH DISTRIBUTION IN PYROCERAMICS  
-U-  
AUTHOR--(04)-BELOIVAN, A.F., BEREZANSKIY, V.V., ISAKHANOV, G.V., ZHURAVEL,  
A.YE.  
COUNTRY OF INFO--USSR  
SOURCE--PROBLEMY PROCHNDSTI, VOL. 2, APR. 1970, P. 74-78  
DATE PUBLISHED-----APR 70  
  
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--QUALITATIVE ANALYSIS, PYROCERAM, QUANTITATIVE ANALYSIS,  
BENDING STRENGTH  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/0144 STEP NO--UR/3663/70/002/000/0074/0078  
CIRC ACCESSION NO--AP0123916  
UNCLASSIFIED

2/2 014  
CIRC ACCESSION NO--AP0123915  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT. STUDY OF THE TRANSIENT STRENGTH OF A PYROCERAMIC AS MEASURED ON CYLINDRICAL AND PRISMATIC SAMPLES SUBJECTED TO STATIC BENDING. THE RELATIONSHIPS BETWEEN THE STRENGTH OF THE PYROCERAMIC ON THE ONE HAND AND THE SHAPE AND DIMENSIONS OF THE SAMPLE, AND TYPE OF TESTING ON THE OTHER, ARE ESTABLISHED. QUALITATIVE AND QUANTITATIVE ESTIMATION IS MADE OF THE OBSERVED DISPERSION OF STRENGTH VALUES WITH RESPECT TO A NORMAL VALUE. FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, INSTITUT PROBLEM PROCHNOSTI, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

USSR

UDC 627.824.33:624.042.6.001.24

LOMIZE, G. M., Doctor of Technical Sciences, IVASHCHENKO, I. N.,  
Candidate of Technical Sciences, ISAKHANOV, YE. A., ZKHAROV,  
M. N., Engineers

"The Deformability, Strength and Creep of Clayey Soils in Cores  
of High Head Water Dams"

Moscow, Gidrotekhnicheskoye Stroitel'stvo, No 11, Nov 70,  
pp 26-31

Abstract: The article gives a general formulation of the question of calculation of the cores of high head water dams and the problem of research on the initial equations of the stress-deformed state in the regions before and after the limit. It is shown that the stress-deformed state must be evaluated for various load trajectories, and that the influence of creep processes in various load regimes within time must also be studied. Results of experimental study of the deformability of clayey soils under conditions of simple and complex (according to Il'yushin) loading with a stationary position of the axis of the main stresses and  
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USSR

LOMIZE, G. M., Gidrotekhnicheskoye Stroitel'stvo, No 11, Nov 70,  
pp 26-31

with a turn of these axes are set forth, as well as results of  
research on creep in two loading regimes in time: at a constant  
rate of deformation or at a constant stress velocity. 14 figures,  
3 tables, 2 footnote bibliographic references, 7 bibliographic  
entries.

2/2

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USSR

UDC: 621.791.763.029  
ORLOV, B. D., MARCHENKO, A. L., ISAKOV, A. F., BILEV, K. K., IL'IN, B. V.

"A Liner for Spot and Roller Welding"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obozraztsy, Tovarnyye Znaki, No 5, 1970, p 74, patent No 261602, filed 6 Nov 68

Abstract: This Author's Certificate introduces a liner for spot and roller welding of aluminum-magnesium alloys. This liner, in the form of a strip, is introduced into the zone of the welded seam mainly for checking penetration. As a distinguishing feature of the patent, inspection quality is improved and the corrosion strength of the welded joint is increased by making the strip from an alloy of aluminum and manganese taken in the following percent ratio: manganese -- 5-6%, and the remainder aluminum. The thickness of the strip is 7-8% of the thickness of one of the plates being welded.

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*Medical Science*

PEOPLES COMMISSARIAT OF HEALTH IN THE FAR EAST

№ 1 354.61(571.0) (091)

Article by A.Y. Isakov, Candidate of Medical Sciences, head of the Amurskaya Oblast Health Department; Moscow, Soviet Science (1972, No 12, 1972, submitted 26 June 1972, pp 61-66)

Our country is celebrating the 50th anniversary of the formation of the USSR, for the residents of the Far East this anniversary coincided with the 50th anniversary of the liberation of this region from the White Guard and foreign interventionists. History moves inevitably forward, while the people who participate in this progressive process leave their trace. Such a mark on development of public health in the Far East was left by the People's Commissariat of Health of Amurskaya Oblast.

The first among them to be mentioned is Prokopy Yegorovich Vokhlov. He was born in 1886 in the village of Semiozovka, Blagoveshchenskiy krai, in Amurskaya Oblast; at the age of nine years he was sent to a rural school which he finished in 1901; after this he volunteered in the army. During the first imperialistic war, P.Ye. Vokhlov was attached to a group of field-sher students at Ussuriysk hospital. Upon completing the course in 1917, with a group of field-sher students he enrolled in a so-called death battalion and was sent to Cherdanovsk as a medical assistant, and later on he was in charge of a pharmacy. Unwilling to fight for the tsar, he pretended to be sick and was put in an infirmary from which he received a three-month leave and went back to his native village on the Amur.

Along with other front-line soldiers P.Ye. Vokhlov registered his village. By decision of a meeting of front-line soldiers with the Bolsheviks, he and Vokhlov were sent to establish communications with the Bolsheviks in the district; there he met Mikhlin, head of the Dolzhnevskaya village in Blagoveshchenskiy krai; later on Prokopy Yegorovich was elected numerous times to the district (territorial subdivision of Ussuriysk) and oblast congresses of the Amurskaya Oblast.

The Fourth Far Eastern Congress of Amurskaya Oblast convened in April 1918 and, along with general political problems, it also dealt with public health problems. A commissariat of health was organized to administer all

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31 Jan 73

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situation in this area, to be headed by P. Ye. Vahlyov. The concrete plan of nationalizing all hospitals and pharmacies, the commissariat the task of nationalizing all hospitals and pharmacies. In the minutes No. 28 dated 17 April 1918 it is stated: "The private hospital of Yaroslav is to be nationalized for the working people and it is to be named the Second Oblast Hospital; the hospital of the Red Cross is to be named the Third Oblast Hospital; it is to be named the First Amurskaya Oblast Hospital" [1].

Commissar P. Ye. Vahlyov worked during the difficult period of formation of Soviet public health in the Far East. The severe famine and the White Guard and foreign interventionists, epidemics of typhus and other infectious diseases posed exceptionally complex and diverse problems to medical and sanitary institutions. One can judge the state of medical care from a decree adopted by the Fourth Peasant Congress. It states: "The Fourth Peasant Congress of Amurskaya Oblast, having heard the reports dealing with public health and discussions on this subject, finds that the medical organization is in the worst state in Amurskaya Oblast and that one hospital is not consistent with the population size, furthermore, because of the failure to manufacture certain drugs in Russia, the hospital is in a poor state with regard to medicine and surgery. With such a network of pharmacies and hospitals the people are not always able to receive prompt medical care which results in a higher mortality rate in Amurskaya Oblast and for this reason it is hereby resolved: all hospitals and pharmacies must be public, i.e. State institutions, drugs and surgical equipment should be acquired at the government's expense. The Soviet of Peasant, Worker, and Soldiers' Deputies is to elect a commission of public health which is to work out measures concerning the construction of new hospitals and pharmacies in areas where they are needed" [2].

This decree was in the interests of strengthening therapeutic institutions. But in the presence of the rigid class struggle of that time it could not be brought to life. On 6 March 1918, General of the White Guard led a counterrevolutionary revolt in Blagoveshchensk. Soviet power was overthrown in that city. P. Ye. Vahlyov initiated immediate measures to render medical care to the wounded; they were placed in hospitals and private houses. Physicians with reactionary tendencies escaped to Sakhalin, in China. There was a shortage of drugs, linens, bandages, and materials. The commissariat was left with one physician, two medical students, one Feldsher, and 15 women who volunteered as nurses.

To control the outbreak of typhus, P. Ye. Vahlyov organized anti-typhus detachments. By that time, Soviet power existed in the Far East only in Amurskaya Oblast. The Japanese were approaching Vladivostok, our army left China after some battles.

The situation made it necessary for urgent evacuation of the wounded from Blagoveshchensk. According to the decision of the revolutionary headquarters, P. Ye. Vahlyov was told to Zeya. As the ship moved up-ship towards the Zeya River the first contingent of wounded (100 people) was along the Zeya River the first contingent of wounded (100 people)

PUBLICATIONS

UDC 613 693 (02)

USSR

ISAKOV, P. K., IVANOV, D. I., POPOV, I. G., RUDNYY, N. M., SAKSONOV, P. P.,  
and YUGANOV, Ye. M.

Teoriya i Praktika Aviatsionnoy Meditsiny (The Theory and Practice of  
Aviation Medicine), Moscow, "Meditsina," 1971, 396 pp.

Translation: Annotation: This monograph elucidates theoretical and practical  
questions of aviation medicine. It presents brief information on the physio-  
logy, hygiene, pharmacology, toxicology, radiology, internal medicine, surgery,  
psychology, and other disciplines which make up the theoretical basis of  
aviation medicine. Questions of the medical flight examination for flight  
personnel, medical checks on flight safety, evacuating sick and wounded  
persons by air, and medical support for various types of aviation are con-  
sidered.

The book is intended for aviation doctors and students at academies and  
aviation institutes and faculties.

Preface

The development of aviation medicine began with the introduction of aircraft  
into practical use. At the present time, representatives of practically all

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ISAKOV, P. K., et al., Teoriya i Praktika Aviatsionnoy Meditsiny (The Theory and Practice of Aviation Medicine), Moscow, "Meditsina," 1971, 396 pp.

medical specialization devote attention to questions of aviation medicine. Furthermore, biologists and psychologists participate extensively in developing the scientific propositions which are used in aviation medicine.

In comparison with other occupations, flying activity involves a very high degree of action by various extreme factors on the organism. Even a slight emergency, similar to one which on the ground could be eliminated without danger to the crew, may end in disaster in the air if a set of special measures is not envisioned. For this purpose, aviation doctors participate in evaluating each new type of airplane, beginning with its design and ending with flight testing, and they conduct medical and psychological selection of candidates for flight schools. All activity by flight personnel is under constant observation by aviation doctors who regulate the flying load and participate in evaluating the pilot's readiness to perform the flight assignment.

In this book the first attempt is made to show, along with a presentation of the theoretical aspects of aviation medicine, the possibilities for applying this knowledge in the aviation doctor's practice.

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USSR

ISAKOV, P. K., et al., Teoriya i Praktika Aviatsionnoy Meditsiny (The Theory and Practice of Aviation Medicine), Moscow, "Meditsina," 1971, 396 pp

The authors made no attempt to present all questions of aviation medicine without exception. In order to carry out such an attempt at the present time, a multi-volume publication would be needed. This refers particularly to the clinical aspects of aviation medicine. The specific etiological condition for the development and course of deviations in health caused by flight factors, analyzing the possibility of performing flights after suffering diseases, and the system and methods for medical monitoring of the state of health of flight personnel are all clinical aspects of aviation medicine which are elucidated in appropriate publications and, naturally, are treated in a limited manner here.

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  - Structure of the Atmosphere
  - Elements of Flight Aerodynamics

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ISAKOV, P. K., et al., Teoriya i Praktika Aviatsionnoy Meditsiny (The Theory and Practice of Aviation Medicine), Moscow, "Meditsina," 1971, 396 pp.

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USSR

UDC 533.607.11

GRIGORYEV, V. V., ISAYEV, S. N., KUKLIN, B. A.

"Shock Tube with a Diffuser Near a Diaphragm"

Trudy Leningradskogo Politehnicheskogo Instituta, Aerotermodinamika  
(Works of the Leningrad Polytechnical Institute, Aerothermodynamics),  
No 313, 1970, pp 131-136

Translation: This article contains an investigation of various models of gas flow in a shock tube with a diffuser and in the region of small Mach numbers of the shock wave. Relations are derived which relate the intensity of the shock wave to the initial conditions in the high and low pressure chambers.

The characteristic features of the structure of a device of this type are investigated briefly. The preliminary experimental data obtained are compared with theoretical estimates. There are 5 illustrations and a 3-entry bibliography.

1/1

Foundry

USSR

UDC 669.71.046.44

RAKHIMOV, A. R., MUKHYMBEKOVA, M. K., ISAKOV, U. I., and  
PONOMAREV, V. D.

"Method of Processing Aluminosilicate Slags Obtained During Reduction Smelting of Lisakovskiy Concentrates"

Sb. materialov Vses. seminarov energetikov predpriyatiy tsvetn. metallurgii po ekon. elektroenergii (All-Union Seminar of Electrical Engineers of the Enterprises of Non-ferrous Metallurgy on the Question of Economizing on Electrical Power -- collection of transactions), Moscow, 1970, pp 20-28 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11 G98)

Translation: Aluminosilicate slags were smelted from fluxed pellets of magnesium lisakovskiy concentrate. Experiments of sintering the slags with soda were conducted and the optimal conditions of sintering were established. The conditions of decomposition of cakes and the effect of different factors were studied. Experiments were conducted involving combined processing of aluminosilicate slags with red slime using the autoclave method, and the feasibility of such a combination was shown.  
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USSR

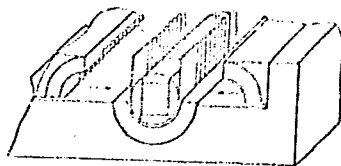
UDC 621.372.823

BAZARNYY, Ye. M., ISAKOV, V. N., NEFEDOV, V. G., LAGEREV, L. I.

"A Device for Making Corrugated Waveguides of Circular Cross Section"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,  
No 22, Aug 71, Author's Certificate No 309422, Division H, filed 24 Oct 69,  
published 9 Jul 71, p 206

Translation: This Author's Certificate introduces a device for making corrugated waveguides of circular cross section. The device contains a frame and a sectional corrugated mandrel. As a distinguishing feature of the patent, the manufacturing process is simplified by using sliders which move in a direction perpendicular to the axis of the waveguide. The inner spherical surface of the sliders is corrugated with respect to the waveguide profile.



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USSR

I UDC 621.372.831.1

LAGEREV, L. I., BAZARNYY, Ye. M., ISAKOV, V. N., MAR'IN, V. I.

"New Waveguide Couplings"

Elektron. prom-st'. Nauchno-tekhn. sb. (The Electronics Industry. Scientific and Technical Collection), 1970, No 1, pp 121-123 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10B177)

Translation: The authors consider two types of circular waveguide couplings made by the cold pressing method -- a permanent coupling (a sleeve into whose opening the sections to be joined are pressed) and a detachable coupling (a flange unit). One such flange coupling is a rapid-action unit made up of two flanges connected by bolts and a drift pin. The reliability and simplicity of the new couplings is noted. Three illustrations. N. S.

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USSR

UDC: 8.74

ISAKOV, V. P., LOSKUTOV, N. G.

"On Selecting an Algorithmic Language for Programming Problems in Semantic Data Processing"

V sb. Statistika rechi i avtomatich. analiz teksta (Statistics of Speech and Text Analysis--collection of works), Leningrad, "Nauka", 1971, pp 435-443 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V983)

Translation: The authors substantiate selection of ALGEM language for "Minsk" class computers when describing algorithms of information-logic problems. An algorithm of text analysis on a digital computer for purposes of compiling a count of the most frequently used words and word combinations in Russian texts on electronics is taken as an example. The criterion for isolation of word combinations is selected, and a flowchart of the algorithm is described. I. Bystrov.

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USSR

UDC: 539.1.071

ALEKSANDROV, I. A., BOLOTOV, V. I., DEVISHEVA, M. N., DEVISHCHEV, M. I., ISAKOV, V. V., SAMOYLOV, A. V.

"Spark Spectrometer Investigation of a 70-GeV Particle Beam"

Moscow, Atomnaya Energiya, Vol 31, No 6, Dec 71, pp 589-593

Abstract: The authors evaluate the accuracy of the theoretical calculations for one of the channels of the accelerator at the Institute of High-Energy Physics by comparison with experimental measurements using a spark spectrometer. The initial statistics were gathered during graduation measurements made in an experiment to detect particles with a fractional charge (quarks). In these measurements, the channel was adjusted to a momentum of 60 or 65 GeV/s with an average angle of emergence  $\theta = 11$  and 0.14 mrad respectively. The magnetic spark spectrometer consists of four neon-filled spark chambers

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ALEXSANDROV, I. A., et al., Atomnaya Energiya, Vol 31, No 6, Dec 71, pp 589-593

with a gap of 200 mm and a working area of 400 x 400 mm. Between the spark chambers is an SP-12A1 magnet. A Minsk-2 computer was used in analyzing the films. Differential cross sections are calculated for production of negative particles in collisions between protons and aluminum nuclei. A comparison of theoretical and experimental beam characteristics shows that the accuracy with which the phase parameters of the beam were calculated is fairly high and technical realization of this accuracy is feasible. The results of calculation of the differential cross sections for negative particle production agree satisfactorily with the data in the literature found by another method. The authors thank Yu. D. Prokoshkin, responsible for initiation of this work; V. I. Kotov for interest in the work; and also Yu. S. Khodyrev and S. P. Danisov for constructive criticism. Five figures, bibliography of eight titles.

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1/2 024 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--ISOMERIZATION OF N,BUTENES ON NICKEL ZEOLITE CATALYSTS -U-

AUTHOR--ISAKOV, YA.I., LAPIDUS, A.L., AVETISYAN, R.V., SENDEL, A.K.,  
MINACHEV, KH.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (1), 57-63

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ISOMERIZATION, BUTENE, NICKEL, ZEOLITE, CHEMICAL KINETICS,  
CATALYST ACTIVITY, DIMERIZATION, ETHYLENE, ION EXCHANGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

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PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0200278

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. KINETIC DATA WERE REPORTED IN GRAPHIC AND TABULAR FORM FOR THE TITLE REACTIONS OF A MIXT. OF 1 AND 2 BUTENES OVER SYNTHETIC ZEOLITES WITH VARYING AMTS. NI, CA AND DY, PREPD. BY PREVIOUSLY REPORTED METHODS. THE ZEOLITES OF TYPES CAA, CAX, CAY, DY AND HM AS WELL AS NI,CONTG. DERIVS. WERE VERY ACTIVE IN TRANSPOSITION OF DOUBLE BOND IN THE BUTENES AND THE MOST ACTIVE WERE NI-NAY, CAX, 5PERCENT NI-DY AND 5PERCENT NI-HM CONTACTS. THE ZEOLITES OF THE Y TYPE SHOWED INCREASING ACTIVITY WITH INCREASING DEGREE OF EXCHANGE OF NA BY NI IONS. BESIDES TRANSPOSING THE DOUBLE BOND, THE CATALYSTS ALSO BROUGHT ABOUT FORMATION OF MECH: CH SUB2 AND HIGHER HYDROCARBONS, MAINLY AMYLENES, AS WELL AS INTERCONVERSION OF CIS AND TRANS FORMS OF BUTENES. THE SUGGESTION OF PRIMARY FORMATION OF 2 BUTENE ON ION EXCHANGING NI, ZEOLITE CATALYST IN DIMERICATION OF C SUB2 H SUB4 WAS CONFIRMED.

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UNCLASSIFIED

Controls

USSR

UDC: 621.374

BOGACHEV, A. I., ~~ISAKOV, Yu. D.~~, LYAPINSKIY, Yu. V., LYAPINSKIY, V. V., and KHORN, V. N.

"Method of Transforming Time Shift Between Pulses"

Moscow, Izmeritel'naya tekhnika, No 3, 1972, pp 52-54

Abstract: The necessity occasionally arises, in automatic control and computer engineering, to determine the time shift of one pulse train relative to another or to transform it linearly into pulse widths. A device for doing this is discussed in this article. A block diagram of the device is given and its operation explained, together with a timing diagram. Some details of the method of its testing are given. The device is subject to two types of error: one, in determining the the moment of passage of zero value of the sinusoidal signal; two, in the magnitude of the insensitivity zone. Advice in the reduction of these errors is provided. The instrument can be used in the mass production of functional elements.

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USSR

UDC: 534.222.2

ISAKOV, Yu. I., PETROV, R. L.

"Propagation of Shock Waves in a Pipeline with Fast-Acting Valves"

Tr. Leningr. politekhn. in-ta (Works of Leningrad Polytechnical Institute),  
1970, No 313, pp 127-130 (from RZh-Mekhanika, No 9, Sep 70, Abstract No  
9B261)

Translation: A description is given of a stand for studying the operation of a fast-acting pneumatic valve in a high-pressure pipeline system. Gas flow in the pipeline (diameter 32 mm) when the valve is opened (time of opening  $8 \cdot 10^{-3}$  s) is compared with the operation of a shock tube. Data are given on experimental determination of the attenuation of a shock wave in a low-pressure pipeline at various distances from the valve (up to 1000 diameters). The damping factor is found from the experimental data and compared with that calculated from the coefficient of surface friction.

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USSR

UDC 621.643:532.5

ISAKOV, YU. I., PETROV, R. L.

"Propagation of Shock Waves in a Line with a High-Speed Valve"

Trudy Leningradskogo Politeknicheskogo Instituta, Aerotermodinamika  
(Works of the Leningrad Polytechnical Institute, Aerothermodynamics),  
No 313, 1970, pp 127-220

Translation: This article contains a description of a test unit for studying the operation of a high-speed pneumatic valve in a system of high-pressure lines. The characteristic features of the gas flow in the line ( $\varnothing 32\text{mm}$ ) on opening the valve (opening time  $8.10^{-3}$  seconds) are compared with operation of a shock tube. Data are presented on the experimental determination of damping of the shock wave in a low pressure line at various distances from the valve (up to 1,000 gages). The damping coefficient is found by the experimental data, and it is compared with the data calculated by the surface friction coefficient. There are 2 illustrations and a 3-entry bibliography.

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USSR

ODC 009.009.4

REZNYAKOV, A. A., ~~ISAKOVA, R. A.~~, YESYUTIN, V. S., NESTEROV, V. N., NECHIPORENKO,  
G. I., MOROZOV, I. F., ZHUKOV, P. I., ZAVADSKAYA, N. F., and KALENIN, V. Ya.

"Increasing the Effectiveness of Vacuum Refining of Selenium"

Moscow, Tsvetnyye Metally, No 1, Jan 70, pp 54-57

Abstract: Data were obtained which confirm the results of previously conducted laboratory investigations regarding the possibility of producing high-quality commercial Se in a single operation. At  $450^{\circ}$  and a vacuum of 0.6 mm Hg, the output of the apparatus was 2 t/m<sup>2</sup> per day. The yield of high-quality Se was 60%; highly volatile fractions and mother liquor accounted for 15 and 5%, respectively. During prolonged operation of the apparatus the disks overgrown with shelliness, which formed as the result of the precipitation of metal selenides suspended in Se. An investigation of the filtration of fusion and vapors of Se showed that it is possible to produce high-quality commercial Se in a single operation. The process has been introduced into Se production.

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Acc. Nr:

AP0049766

Abstracting Service:

CHEMICAL ABST. 5-70

Ref. Code:

4R 0191

101291n Effect of the molecular-weight distribution of suspension poly(vinyl chloride) on the technological properties of rigid compositions. Manushin, V. I.; Balashova, T. S.; Baranova, L. G.; Isakova, V. A.; Zhikharevich, L. B. (USSR). Plast. Massy 1970, (1), 26-9 (Russ). The effects of the mol. wt. distribution of suspension poly(vinyl chloride) (I) (3 imported and 2 Soviet brands) on its extrudability were studied. The processability of rigid I compns. was evaluated from the melt index and the behavior of I during processing. Differential mol. wt. distribution curves indicated that I processability could not be properly evaluated from Finketscher const., but also required an evaluation of mol. wt. distribution. Fractional compn. of I and its statistical distribution width indicated a relation between the melt index and the heterogeneity factor ( $U$ ) characterizing the statistical distribution width of I. Two regression equations were derived by statistical treatment of  $U$  and the melt index. The equations indicated that I extrudability could be quant. evaluated from  $U$ .  
CKJR

REEL/FRAME

19801684

1/2 030 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--THEORY OF LOW FREQUENCY OCEAN NOISES -U-  
AUTHOR--(02)-ISAKOVICH, M.A., KURYANOV, B.F.  
COUNTRY OF INFO--USSR  
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DATE PUBLISHED-----70  
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TOPIC TAGS--LOW FREQUENCY, OCEAN ACOUSTICS, FLUID SURFACE, ATMOSPHERIC  
WIND, SURFACE WAVE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3007/1853 STEP NO--UR/0046/70/016/001/0062/0074  
CIRC ACCESSION NO--AP0137054  
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0137054

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THEORY IS ADVANCED THAT LOW FREQUENCY OCEAN NOISES ARE GENERATED BY TURBULENT WIND ACTION AT THE SURFACE. THE ACTION OF THE WIND ON THE WATER SURFACE IS VIEWED AS A SYSTEM OF RANDOM TANGENTIAL PRESSURE FORCES DISTRIBUTED OVER THE OCEANIC SURFACE DEPENDENT ON THE CHARACTER OF THE WIND (VELOCITY, TURBULENCE) AND THE FORM OF THE DISTURBED SURFACE. THE SPECTRAL DENSITY OF NOISE PRESSURE IS EXPRESSED BY THE SPECTRUM OF SURFACE WAVES AND THE COEFFICIENT OF ATTENUATION OF THESE WAVES. THEORETICALLY COMPUTED NOISE LEVELS AND THE DEPENDENCE OF THESE LEVELS ON THE FREQUENCY, DEPTH, AND VELOCITY OF WIND ARE COMPARED WITH EXPERIMENTAL RESULTS IN THE LITERATURE. IT IS CONCLUDED THAT DIRECT WIND ACTION ON THE SURFACE LAYER IS ONE OF THE REASONS (PERHAPS THE MAIN REASON) FOR THE GENERATION OF LOW FREQUENCY OCEAN NOISES. FURTHER IT IS CONCLUDED THAT DIRECT WIND ACTION ON ICE FORMATIONS AND OVER THE SURFACE OF THE EARTH ALSO HAS A ROLE IN THE FORMATION OF NOISES UNDER THE ICE AND SEISMIC NOISE IN THE EARTH. FACILITY: AKUSTICHESKIY INSTITUT.

UNCLASSIFIED

1/2 042 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--EFFECT OF GAMMA RAYS ON THE VOLT AMPERE CHARACTERISTICS OF DIODES  
-U-  
AUTHOR--(03)-MIRSAGATOV, SH.A., ISAMUKHAMEDOVA, D.K., YUNUSOV, M.S.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK UZB. SSR, SER. FIZ.-MAT. NAUK 1970, 14(2), 57-9  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS  
TOPIC TAGS--VOLT AMPERE CHARACTERISTIC, SEMICONDUCTOR DIODE, SILICON  
CARBIDE, GAMMA IRRADIATION, ATOMIC DEFECT, ACTIVATION ENERGY, CARRIER  
DENSITY, CAPTURE CROSS SECTION  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3007/1871 STEP NO--UR/0166/70/014/002/0057/0059  
  
CIRC ACCESSION NO--AP0137068  
UNCLASSIFIED

2/2 042

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137068

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VOLT AMPERE CHARACTERISTICS OF 2 TYPES OF SIC DIODES WERE STUDIED BY HIGH GAMMA RAY DOSES, 10 PRIME4 -10 PRIME9 R, AND BY CURRENTS OF 10 PRIME9 -10 PRIME NEGATIVE1 A IN BOTH DIRECTIONS. DEFECTS WERE FOUND WITH ACTIVATION ENERGIES OF FORMATION OF 0.03 PLUS OR MINUS 0.08 AND 0.3 EV. THE DIFFERENCES BETWEEN THEORETICAL AND EXPTL. VALUES IN CROSS SECTIONS OF THE DEFECTS ARE SUBSTANTIATED THROUGH THE DIMINISHING OF EQUIL. CARRIER CONC. OR THROUGH VARIOUS INACCURACIES. FACILITY: FIZ.-TEKH. INST. IM. STARODUBTSEVA, TASHKENT, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--STRUCTURE OF ULTRATGRAFTING WITH STYRENE OR VINYLTOLUENE -U-

AUTHOR--(04)-RAZIKOV, K.KH., ISAMUKHAMEDOVA, I.I., USMANOV, KH.U., AZIZOV,  
U.A.

COUNTRY OF INFO--USSR

SOURCE--UZB. KHIM. ZH. 1970, 14(1), 35-8

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--NATURAL FIBER, STYRENE, CELLULOSE, VINYL COMPOUND, TOLUENE,  
METHYL METHACRYLATE, ACRYLATE, EPOXY RESIN, QUARTERNARY AMMONIUM SALT,  
GRAFT POLYMERIZATION/(U)EDS EPOXY RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1999/1838

STEP NO--UR/0291/70/014/001/0035/0038

CIRC ACCESSION NO--AP0123627

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 016

CIRC ACCESSION NO--AP0123627

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. ELECTRON AND OPTICAL MICROSCOPY OF THE TITLE POLYMERS SHOWED THAT THE INCREASE OF GRAFTING GREATER THAN OR EQUAL TO 21.5PERCENT CAUSES STRUCTURAL CHANGES OF THE COTTON FIBERS. POLYSTYRENE OR POLY(VINYLTOLUENE) CHAINS SWELL IN ME METHACRYLATE, BU METHACRYLATE, OR EPOXY RESIN ED-5, USED IN MOUNTING OF THE SAMPLES FOR MICROSCOPY AND SEPG. THE FIBERS. HOWEVER, THE GRAFTED CELLULOSE CONTG. GREATER THAN OR EQUAL TO 13.4PERCENT GRAFTED CHAINS DOES NOT SWELL OR DISSOLVE IN QUATERNARY AMMONIUM BASES.

UNCLASSIFIED



USSR

UDC [537.226 + 537.311.33] : [537+535]

LEYDERMAN, A. Yu., KARAGEORGIY-ALKALAYEV, P. M., ISAMUKHAMEDOVA, M.

"Electroluminescence and Photoelectric Effects in Semiconductors With Cross-Impurity Recombinations"

Kiev, V sb. Elektrolyuminestsentsiya tverd. tel (Electroluminescence in Solids -- collection of works), Nauk. Dumka, 1971, pp 102-104 (from RZh-Fizika, No 11, 1971, Abstract No 11E1186)

Translation: Expressions are obtained for the rate of cross-impurity recombination in a semiconductor and for the extent of filling of the local levels forming a pair. It is shown that the lumen-ampere characteristic at various intervals of current density can be described by the power function  $L \sim I^n$ , where  $n = 1.3/2.2$ . When the concentration of the recombination pairs is large, the adhesion effect of the carriers becomes noticeable. Then, anomalous phenomena of the type of light and temperature quenching of the photoconductivity and of negative internal photo-effects arise. A necessary condition for the appearance of these phenomena is the reduction in lifetime of the free, unbalanced carriers under heat or external impurity bias lighting. Author's abstract.

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USSR

UDC: 621.396.9:527.629.78

CHEBOTAREV, R. P., SIDORIN, V. N., POLUSHKIN, G. A., BIBAEV, R. Sh.,  
ISAMITDINOV, Sh. O., KOLPAKOV, V. M.

"A Set of Equipment for Radar Studies of Meteors in Dushanbe"

Byul. In-ta astrofiz. Akad. Tadzh. SSR (Bulletin of the Institute of Astrophysics of the Academy of Sciences of Tadzhik SSR), 1970, No 55, pp 24-28  
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12694)

Translation: The authors describe a set of equipment for measuring the wind in the upper atmosphere in the IQSY program at the Institute of Astrophysics of the Academy of Sciences of the Tadzhik SSR. The equipment is designed for determining coordinates, altitudes, radiants and velocities of meteors, and for studying the physics of meteors and of the upper atmosphere. Data are given in brief for operation of the equipment complex. Resumé.

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1/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--AMINO ACID COMPOSITION OF CORN IN CONNECTION WITH ITS HEAT  
TREATMENT -U-  
AUTHOR-(02)-YAKOVENKO, V.A., ISAROVA, L.YU.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (2), 137-7  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--CEREAL CROP, AMINO ACID, HEATING  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3008/0722 STEP NO--UR/0322/70/000/002/0134/0137  
CIRC ACCESSION NO--AT0137797  
UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70  
CIRC ACCESSION NO--AT0137797  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AMINO ACID COMPN. OF CORN  
RIPENED BY HEATING DID NOT SIGNIFICANTLY DIFFER FROM THAT OF COMPLETELY  
RIPE CORN. HEATING OF COMPLETELY RIPE CORN AT 40DEGREES DOES NOT EFFECT  
ITS AMINO ACID COMPN. FACILITY: ODESS. TEKHNOL. INST. IM.  
LOMONOSOVA, ODESSA, USSR.

UNCLASSIFIED

USSR

ISATAYEV, S. I., TARASOV, S. B., Alma-Ata

~~ISATAYEV, S. I., TARASOV, S. B.~~  
"Effect on a Jet of Acoustic Field Directed Along the  
Axis of the Jet"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i  
Gaza, No. 2, March-April, 1971, pp 164-167

Abstract: An experimental investigation of the effect of  
the acoustic field directed along the axis of the jet on  
the velocity distribution, turbulence and energy spectrum  
has been conducted.

Air was discharged from a round nozzle of 10 mm  
diameter at 30.5 meter/sec velocity. A 10 watt acoustic  
source was located in the stilling chamber upstream from  
the nozzle. The velocity pulsations were measured by a  
hot wire anemometer.

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USSR

ISATAYEV, S.I., et al, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 2, March-April 1971, pp 164-167

Experiments were made without acoustic field, with acoustic frequency equal to the natural frequency of the jet and with acoustic frequency several times higher. In the second case there were two peaks in the turbulence versus distance curve; the turbulence at the first peak was 3.5 times higher than in the first case at the same distance. In the third case the turbulence was lower than in the first.

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Acc. Nr:

AP0038228

Abstracting Service:



BIOLOGICAL ABST.

Ref. Code:

3-70 UR 0507

ISAYAN M.V.

32151. ISAYAN, M. V. (Dep. Eye Dis., Yerevan Med. Inst.,  
Yerevan, USSR.) Otdalennye rezultaty vnutrinosovykh spirt-novo-  
kainovykh in'ektsii v komplekse lecheniya gerpetcheskogo keratita.  
Long-term results of intranasal alcohol-procaine injections in the  
combined treatment of herpetic keratitis. Zh. Eksp. Klin. Med.  
9(3): 74-76, 1969. An analysis of the long-term results (1-5 years)  
showed that a stable condition was maintained in most of the patients  
treated. Relapses were noted in only 5.49 % of the patients. -S. T.

REEL/FRAME  
19731294

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USSR

UDC 548.53:669.27

ZASINCHUK, YE. E., and ISAYCHEV, V. I., Institute of Metal Physics, Academy of Sciences, USSR

"Kinetics of Primary, Secondary, and Collective Recrystallization in Tungsten Wire"

Kiev, Metallofizika, No 31, 1970, pp 59-66

Translation: An x-ray diffraction and metallographic study was made of the kinetics and texture of primary, secondary, and collective recrystallization in a tungsten wire of a varying composition in the temperature interval 900°-2300°C. The effect of the wire composition on the type of the process of grain growth occurring in the wire in the temperature interval 1900°-2300°C after completion of primary recrystallization was detected. It is shown that the kinetic relationships of the studied processes in the wire are similar to those observed in foil and in large samples. The temperature dependence of the rates of grain boundary migration is characterized by a reduction in the temperature rate coefficient as the temperature interval of the process shifts toward higher temperatures. For collective and secondary recrystallization, in practice, this coefficient coincides with the energy of diffusion  
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USSR

ZASIMCHUK, YE. K., and ISAYCHEV, V. I., Metallofizika, No 31, 1970, pp 59-66

activation along the grain boundaries, whereas for primary recrystallization it is much higher, rising as the amount of impurity in the wire increases. It is shown that the axial texture of all the studied wire varieties in the deformed and recrystallized state can be described by the direction  $[110]$ . In secondary recrystallization, along with this orientation, the texture component is manifested  $[211]$ .

Bibliography: 27 entries, 7 illustrations, 1 table.

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1/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--USE OF COUNTERCURRENT CRYSTALLIZATION TO PURIFY VINYL ACETATE -U-  
AUTHOR-(03)-DEVYATYKH, G.G., UMILIN, V.A., ISAYCHEVA, L.V.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKL. KHIM. LENINGRAD 1970, 43(4), 936-8  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--CRYSTALLIZATION, CHEMICAL PURIFICATION, VINYL COMPOUND,  
ACETATE, PARTITION COEFFICIENT, ACETIC ACID  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1997/0726 STEP NO--UR/0080/70/043/004/0936/0938  
CIRC ACCESSION NO--AP0119633  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119633

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PARTITION COEFFS. (K) OF ACOH OR WATER BETWEEN LIQ. AND SOLID PHASES OF VINYL ACETATE (I) ARE 1.30 AND 1.47 RESP. AND THESE COMPOS. MAY BE EFFECTIVELY REMOVED FROM I BY COUNTERCURRENT CRYSTN. (H. SCHILDKNECHT, ET AL., 1951). K OF ACETONE AND ACH ARE 1. THE LAB. APP. USED TO OBTAIN I CONTG. SMALLER THAN OR EQUALS TO 1 TIMES 10 PRIME NEGATIVE4 MOEL PERCENT WATER AND SMALLER THAN OR EQUALS TO 1 TIMES 10 PRIME NEGATIVE3 MOLE PERCENT ACOH IS DESCRIBED.

UNCLASSIFIED

USSR

UDC: 620.179.16

ISAYENKO, F. I., KIRILLOV, V. I.

"Nondestructive Methods of Strength Testing of Piezoceramic Elements"

Sverdlovsk, Defektoskopiya, No 5, 1972, pp 72-76.

Abstract: The influence of large, isolated defects on the strength of piezoceramic elements of TBK-3 piezoceramic and nondestructive methods of testing of piezoelements with defects are studied. There is a close correlation relationship between defect size and strength. This indicates that the guaranteed strength of piezoelectric elements can be increased if 100% ultrasonic testing of products of piezoceramics for defect dimensions is performed. Internal defects can be tested using series-produced ultrasonic test installation. The stability of the strength characteristics of "defect-free" ceramic materials should also be increased to increase the reliability of piezoelectric elements.

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USSR

UDC 621.373:530.145.6

AVDEYEVA, V. I., AL'PEROVICH, M. A., VANYUKOV, M. P., ISAYENKO, V. I.,  
LEVKOYEV, I. I., SEREBRYAKOV, V. A., STARIKOV, A. D.

"Use of Liquid and Film Transmission Gates in a GOS-1000 Laser"

V sb. Kvant. elektronika (Quantum Electronics--collection of works),  
No 2, Moscow, 1971, pp 69-73 (from RZh-Radiotekhnika, No 7, Jul 71,  
Abstract No 7D114)

Translation: Data are presented on a transmission gate based on a thin  
polymer film into which polymethyne dye is introduced, and on the use  
of this gate in a GOS-1000 laser as a Q-switch. Four illustrations,  
bibliography of five titles. Resumé.

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3

USSR

UDC: 621.378.385

AVDEYEVA, V. I., AL'PHEVICH, M. A., VANYUKOV, M. P., ISAYENKO, V. I.,  
LEVKOYEV, I. I., SEREBRYAKOV, V. A., STARIKOV, A. D.

"Use of Translucent Liquid and Thin-film Gates in the GOS-1000 Laser"

Moscow, Kvantovaya Elektronika, No 2, 1971, pp 69-73

Abstract: The authors present data on a translucent laser gate based on a thin polymer film to which polymethylene dye has been added, and it is shown that such a film gate can be used along with a liquid gate to obtain high-power monopulse emission in the GOS-1000 laser. It is found that film and liquid gates can be used for Q-switching neodymium glass lasers with a large output beam aperture (45 mm or more). The described gates are fairly simple and can be used in serially produced industrial lasers type GOS-1000, in the analogous type GOS-300 unit and others without any appreciable change in the construction of the device or in the power supply circuit. The highest energy and emission power on the GOS-1000 laser in the monopulse mode (80 J and 2.5 GW) can be attained by using a gate which is a cell filled

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USSR

AVDEYEVA, V. I. et al., Kvantovaya Elektronika, No 2, 1971, pp 69-73

with polymethyne dye solution. The new film gate described in this paper, which is a thin polymer film with polymethyne dye added to the film base, is most simple in use and provides comparatively high emission parameters in the GOS-1000 laser (50 J and 1.5 GW), has no optical components in its design, is suitable for use for long periods (8-10 months), and can be used repeatedly at comparatively low energies in the monopulse (20 J).

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USSR

UDC 621.375.82

VANYUKOV, M. P., ISAYENKO, V. I., PASHININ, P. P., SEREBRYAKOV, V. A.  
SIZOV, V. N., STARIKOV, A. D.

"Formation of Powerful Pulses With a Steep Leading Front in a Laser System With Passive Nonlinear Elements"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No. 1, Moscow, 1971, pp 35-41 (from RZh-Fizika, No 7, Jul 71, Abstract No 7D1147)

Translation: The change in the length of light pulses in passage through an illuminating medium of varying transparency was investigated. A nonmonotonic shortening of the length of the trailing pulse was observed under a change in the density of the light load. There was established a dependence of the region of maximum contraction of the light pulse on the magnitude of the light load for various concentrations of the illuminating solutions. There was also established an anomalous change in the process of illumination of a metallized film under its illumination by powerful light radiation. It is proposed that the effects observed be used for the formation of short pulses with a steep leading front. A neodymium glass laser system with a pulse length of 5-7 nsec, a steepness of the leading front of  $\sim 1$  nsec, and a radiation power of 20 Gw was developed. 10 ref. Authors abstract

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USSR

UDC: 621.373:530.145.6

VANYUKOV, M. P., ISAYENKO, V. I., PASHININ, P. P., SEREBRYAKOV, V. A.,  
SIZOV, V. N., STARIKOV, A. D.

"Shaping of High-Power Pulses With a Steep Leading Edge in a Laser System  
With Passive Nonlinear Elements"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 1,  
Moscow, 1971, pp 35-41 (from RZh-Radiotekhnika, No 5, May 71, Abstract No  
5D177)

Translation: An investigation is made of the change in duration of light  
pulses during passage through illuminated media of different transparencies.  
A nonmonotonic reduction in pulse duration after passage through the medium  
is observed when there is a change in the density of the light load. A re-  
lationship is established between the region of maximum constriction of the  
light pulse and the magnitude of the light load for different concentrations  
of transilluminated media. An anomaly is found in the curve for the process  
of transillumination of a metallized film when it is exposed to intense light  
flux. Recommendations are made on using the observed effects for shaping  
short pulses with a steep leading edge, leading to development of a laser  
system based on neodymium glass with a pulse length of 5-7 nsec with a rise  
time of approximately 1 nsec and emission power of 20 CW. Five illustrations,  
bibliography of ten titles. Resumé.  
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USSR

UDC 621.373:535(206.3)

ISAYEV, A. A., KAZARYAN, M. A., PETRASH, G. G.

"A Copper-Vapor Pulsed Laser With Repetition Rate of 10 kHz"

Leningrad, Optika i Spektroskopiya, Vol 35, No 3, Sep 73, pp 528-531

Abstract: Emission and superemittance were obtained in copper vapor by using alundum tubes 70 cm long and 0.8 cm in diameter. The copper was applied in pieces over the length of the discharge tube. Pulsed discharge was excited by a capacitor through a thyatron. The resonator was made up of a dielectric mirror with 2-meter radius of curvature and a flat glass substrate. The laser produced emission on lines of 5106 and 5782 Å. The average emission power at a pulse repetition rate of 10 kHz was 2.4 w, which corresponds to a peak emission power of 48 kw for voltage across the capacitor of 20 kv (pulse duration was 5 ns). An appreciable part of the power was concentrated in the green line. The specific peak power in this case is 1.4 kw/cc, which is a record for all gas-discharge lasers with atomic and ionic transitions.

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USSR

UDC 621.378.345

ISAYEV, A.A., KAZARYAN, M.A., PETRASH, G.S.

"Lead Vapor Pulsed Laser With High Peak And Average Powers"

Kvantovaya elektronika (Quantum Electronics), Moscow, No 5(11), 1972, p 100

Abstract: Previous experiments conducted by the authors show that lasers based on lead, copper, gold, and manganese vapors can operate at a large repetition frequency of pulses which reach 2.5 kHz, and assure significant specific peak powers (order of a hundred watts per 1 cm<sup>2</sup>). These results were obtained with tubes of small active volume, because of which full peak and average powers of generation were limited. In connection with this it was interesting to investigate whether or not a considerable increase of the active volume is possible without a decrease of the specific power of generation. In the present work a lead vapor laser was chosen as the research object because work with it is simpler as the working temperature (900--1000° C) is not too high. Discharged tubes of different diameters were used in the experiments. With tubes which have an interior diameter of 1.5 cm, a length of the active part of 60 cm, a voltage at the primary winding of a pulse transformer of 17 kv, a pressure of the neon buffer gas of 5 torr, and a recurrence frequency of 2.5 kHz, the maximum average power of generation at a line with  $\lambda = 0.723 \mu$  was amounted to 0.5 watt. A peak power of 50 kw and a

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USSR

ISAYEV, A.A., et al, Kvantovaya elektronika, Moscow, No 5(11), 1972, p 100

specific peak power of  $315 \text{ w/cm}^2$  were obtained. The 54 kw exceeds by more than an order of magnitude the value (2 kw) obtained earlier with the same laser. 1 fig. 4 ref. Received by editors, 10 Apr 1972.

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1/4 . 034 UNCLASSIFIED  
TITLE--THE HEART AND ELECTRONICS -U-

PROCESSING DATE--09OCT70

AUTHOR--ISAYEV, A.

I

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, TRUD, 17 JAN 70, P 4

DATE PUBLISHED--17JAN70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEART DISEASE, ELECTROCARDIOGRAPHY, BIOTELEMETRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1990/1072

STEP NO--UR/9025/70/000/000/0004/0004

CIRC ACCESSION NO--AN0109205

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--090CT70

2/4 034

CIRC ACCESSION NO--AN0109205

ABSTRACT/EXTRACT--(U) GP-U- ABSTRACT. TECHNOLOGY AND MATHEMATICS ARE EVER MORE COMMONLY BECOMING GOOD HELPERS OF MEDICINE, ITS RELIABLE COLLEAGUES. THE USAGE OF ELECTRONICS IN THE DAILY PRACTICE OF DOCTORS IS HARDLY A RARITY. THE PROBLEMS OF THE USAGE OF ELECTRONICS IN HEALTH RESORT MEDICINE WERE THE SUBJECT OF A DISCUSSION AT THE SECOND ALL UNION SYMPOSIUM ON BIOTELEMETRY, HELD AT KISLOVODSK. THE LIGHT DIMS IN THE HALL, AND LEAPING CURVES APPEAR ON THE SCREEN, THE ELECTROCARDIOGRAM OF A PATIENT. THE SILENCE IS BROKEN BY A SHARP, RISING WHISTLE. THE SPEAKER EXPLAINS: "YOU ARE HEARING THE OPERATION OF THE HEART, RECORDED BY RADIO". THE CARDIOGRAM AND THE "VOICE OF THE HEART" ARE "PRODUCTS" OF A LONG RANGE BIOELEMETRIC SYSTEM. THE DOCTOR WAS IN AN OFFICE IN ONE WING OF THE "PIKET" SANITORIUM, WHILE HIS PATIENT AT THIS TIME WAS SOMEWHERE 5 KILOMETERS AWAY, FOLLOWING THE PRECISE RHYTHM OF A METRONOME, WALKING UPWARD ALONG A PATH; THE ANTENNA OF THE PORTABLE RADIO TRANSMITTER ON HIS BACK BROADCAST THE SIGNALS FROM PICKUPS ON HIS CHEST, MEASURING THE PHYSIOLOGICAL IMPULSES. THE DOCTOR SAT IN HIS OFFICE AND OBSERVED THE CONDITION OF HIS PATIENT. THE FIRST TRANSMISSION OF BIOTELEMETRIC INFORMATION BY RADIO WAS PERFORMED IN 1921: A SHIP RADIO, USING AN ADDITIONAL AMPLIFIER DEVICE, TRANSMITTED THE HEART TONES OF A PATIENT ON BOARD TO THE SHORE. IN 1957, THE FIRST TRANSMISSIONS FROM SPACE CONCERNING THE HEALTH OF LIVING ORGANISM, THE DOGS ON BOARD A SATELLITE, WERE PERFORMED. SOMEWHAT EARLIER, IN 1955, INVESTIGATIONS WERE BEGUN IN SVERDLOVSK ON THE USAGE OF BIOTELEMETRY IN SPORTS MEDICINE AND PHYSIOLOGY OF LABOR.

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UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AN0109205

ABSTRACT/EXTRACT--THESE HAVE BEEN THE PRINCIPAL STAGES IN THE GROWTH OF THIS METHOD, THE TRANSMISSION OF BIOLOGICAL INFORMATION OVER LONG DISTANCES. HEALTH RESORT MEDICINE HAS BEEN LESS SUCCESSFUL IN THIS RESPECT: BIOTELEMETRY HAS BEEN "PRESCRIBED" IN THE HEALTH INSTITUTIONS OF OUR COUNTRY FOR A COMPARATIVELY SHORT TIME: THREE YEARS AGO THE SCIENTIFIC RESEARCH LABORATORY OF BIOTELEMETRY WAS ORGANIZED AT KISLOVODSK. RECENTLY, THIS LABORATORY HAS ACHIEVED HIGHLY RELIABLE RECORDING BY TAPE RECORDER OF ELECTROCARDIOGRAMS TRANSMITTED THROUGH AN ELECTRONIC CHANNEL. MEDICAL OBSERVATION BY BIOTELEMETRIC APPARATUS IS BEING PERFORMED BY THE STAFF DOCTORS OF THE LABORATORY, V. LEBEDEV AND V. MKRTYCHAN, AND A DOCTOR AT "PIKET" SANITURIUM, S. D. KOGAN. MEDICAL EXPERTS ARE CONTINUALLY MASTERING ELECTRONICS, WHILE ENGINEERS WHO STUDIED AVIATION MEDICINE AS STUDENTS ARE NOW DEEPENING THEIR KNOWLEDGE IN THE AREA OF THE STUDY OF THE HUMAN ORGANISM. THE FOLLOWING EXAMPLE CAN INDICATE THE SIGNIFICANCE OF BIOTELEMETRY. ONCE, PICKUPS INSTALLED ON THE BODY OF A PATIENT SENT OUT A DANGER SIGNAL DURING A WALK: THEY WARNED OF THE EARLY STAGES OF STENOCARDIA. THE PATIENT HIMSELF NOTICED NOTHING, COMPLAINED OF NOTHING. IT IS EASY TO UNDERSTAND WHAT A POWERFUL TOOL BIOTELEMETRY WILL BE FOR PREVENTATIVE MEDICINE. THE KISLOVODSK LABORATORY IS NOT ALONE IN ITS RESEARCH. SIMILAR GROUPS ARE WORKING AT THE HEALTH RESORTS OF ODESSA AND THE BALTIC AREA, AND IN KRASNODARSKIY KRAY.

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UNCLASSIFIED

PROCESSING DATE--090CT70

CIRC ACCESSION NO--AN0109205

ABSTRACT/EXTRACT--AT SVEROLOVSK, AT THE SCIENTIFIC RESEARCH INSTITUTE FOR LABOR HYGIENE AND OCCUPATIONAL DISEASES, RADIO TELEMTRY IS USED FOR STUDIES OF THE CONDITION OF MEN IN THE PROCESS OF PRODUCTION: DURING REPAIRS OF BLAST FURNACES, AT THE MACHINE TOOL, IN MINES. THE MATERIALS OBTAINED IN THESE INVESTIGATIONS ARE OF INESTIMABLE AID IN IMPROVING THE CONDITIONS OF LABOR. BIOTELEMTRY, AT THE SERVICE OF CLINICAL MEDICINE, IS COMING OF AGE.

UNCLASSIFIED



ISAYEV, A. A.

Hydrometeorology

PERIOD OF CALCULATING THE CORRELATION FUNCTIONS OF THE DURNAL PRECIPITATION TOTALS AND THEIR SPACE-TIME VARIABILITY UNDER VARIOUS NATURAL CONDITIONS

10/15/53, 2nd 4th 6th

[Article by Professor A. A. Isayev, Candidate of Geographic Sciences A. A. Isayev, Moscow State University, Moscow, U.S.S.R., submitted 22 June 1972, pp 26-63]

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23 Feb 73

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A procedure is proposed for calculating the correlation functions of the diurnal precipitation totals for territories which is more or less uniform with respect to relief on the basis of the standard station observations and the results of the dependence of the precipitation correlation on the distance and duration of the precipitation correlation (according to the data for the climatic test site). A study was made of the spatial and time variability of the correlation functions. The duration of the observation period required to obtain the "normal" correlation function is investigated.

A comparative analysis of the mutual correlation functions of the precipitation totals used to estimate the observation error presented in [1, 2] shows that their parameters differ among each other. Therefore, in order to estimate the representativeness of the observations in each specific region the correlation function is actually required. In addition, obtaining this information presents a highly laborious process caused by the necessity for data and, consequently, connected with significant expenditures of time and resources. In the light of what has been discussed, especially in connection with the forthcoming realization of the network of the hydrometeorological Service, the problem of obtaining correlation functions without observational and use of special data only on the basis of the existing station observations is highly urgent.

Usually the correlation functions are calculated without considering the duration factor by one of the generally known formulas:

$$r_{ij} = \frac{\sum_{k=1}^n (x_i - \bar{x})(x_j - \bar{x})}{\sqrt{\sum_{k=1}^n (x_i - \bar{x})^2 \sum_{k=1}^n (x_j - \bar{x})^2}} \quad (1)$$

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Academy of Medical Sciences USSR, Moscow

"Immunofluorescent Differentiation of Rickettsia in Ticks With Mixed Infections"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1973,  
pp 13-16

Abstract: Studies were conducted on the efficacy of the immunofluorescent techniques in differentiating between single and mixed rickettsial infections in ticks (*Dermacentor marginatus*), and compared with the results obtained by staining the hemolymph smears by the method of Jimenez. Immune rabbit sera against *Rickettsia tsutsugamushi* were conjugated with fluorescein isothiocyanate (yellow-green fluorescence), and antisera to *Dermacentor sibiricus* were conjugated with rhodamine B (orange-red fluorescence). Hemolymph smears were prepared from control ticks, ticks infected either with *R. tsutsugamushi* or *D. sibiricus*, and ticks infected with both microorganisms. Ten fields of view were examined from the 2d to the 21st postinfection day daily. The results showed that the Jimenez method of staining did not reveal the presence of rickettsia in the hemolymph until day 4, while immunofluorescence revealed the presence of the rickettsia from the 2d day in the case of *R. tsutsugamushi*, and by day 3 in the ticks infected with *D. sibiricus*. The greater

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ISAYEV, A. I., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1973, pp 13-16

sensitivity of the immunofluorescent method was also underlined by the fact that while with the Jimenez method 10 fields of view had to be examined, the former technique showed the presence of rickettsia in each field. Furthermore, immunofluorescence made it possible to distinguish *D. sibiricus* and *R. tsutsugamushi* in ticks with mixed infection. In the latter, it was of special interest that one or the other of the rickettsia infected a cell; seldom were both organisms detected in the same cell. Uninfected control ticks gave no false positive data. The resultant data show that immunofluorescence may be employed in epidemiological studies on ticks, and may reveal infection with two different species of rickettsia by the use of antisera conjugated with different dyes.

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ISAYEV, A. I. and GELLER, Yu. A., Doctors of Technical Sciences, Professors,  
and KIRILLOVA, O. M. and BROSTREM, V. A., Candidates of Technical Sciences

"Dispersion-Hardened Tool Alloys for Processing of High-Strength Structural  
Materials"

Moscow, Vestnik Mashinostroyeniya, No 1, Jan 71, pages 53-57

Abstract: The properties of various types of dispersion-hardened steels have been studied, resulting in recommendation of type V18M7K25 and V18M4K25 alloys containing molybdenum for the manufacture of tools. The cutting properties of these alloys were studied under continuous and intermittent cutting conditions. The influence of heat treatment modes on the properties of the alloys were studied. The investigations showed that a change in hardening temperature between 1250 and 1300°C has no significant influence on the strength and cutting properties of the alloy. The tempering temperature is more significant in this respect. It is established that the maximum strength of cutting tools of V18M7K25 alloys for continuous turning of high strength materials is provided by hardening from 1275-1300°C with subsequent tempering

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ISAYEV, A. I., et al., Vestnik Mashinostroyeniya, No 1, Jan 71, pages 53-57

at 600°C for 2 hours. The hardness of the cutting portion of the tools in this case will be HRC 68-69. Studies have shown that the most effective area of utilization of these tool alloys is in the working of alloys of titanium, austenitic high-manganese and high-strength steels.

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1/2 024 UNCLASSIFIED PROCESSING DATE--09OCT70  
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AUTHOR--(02)-ISAYEV, A.I., MUROZOV, N.A.

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SCREEN/(U)8A TUNGSTEN ALLOY, (U)11 COPPER ALLOY, (U)12KHM6 LOW ALLOY  
STEEL, (U)1KH13 HIGH CHROMIUM STEEL

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SIMULTANEOUS BROACHING OF 80-114 OPENINGS WITH A DIAMETER OF 1, 1.5, 3, AND 3.5 MM WAS INVESTIGATED ON SHEET STEEL 1KH13 AND 12KHMF, 5-6 MM THICK, BY COPPER M1 AND TUNGSTEN VA ELECTRODES ON THE BASIS OF A TYPE 473 GENERAL PURPOSE ELECTRIC PULSE BROACHING MACHINE. THE TEST PROCEDURE IS DESCRIBED, AND THE RESULTS ARE PRESENTED. THUS, AS A RESULT OF THE RESEARCH, CONDITIONS OF THE STABLE SIMULTANEOUS BROACHING OF A NUMBER OF SMALL DIAMETER OPENINGS WERE DEVELOPED. EFFICIENT REGIMES WERE ESTABLISHED FOR THE ELECTRIC PULSE BROACHING OF OPENINGS OF DIAMETERS OF 1.0-3.5 MM IN SHEET STEEL 1KH13 AND 12KHMF, UP TO 6 MM THICK. THE DEVELOPED PROCESS FOR THE SIMULTANEOUS BROACHING OF OPENINGS MAY BE USED IN THE PRODUCTION OF VARIOUS TYPES OF SIEVES, PRODUCTIVITY BEING CONSIDERABLY HIGHER THAN IN THE CASE OF DRILLING.

UNCLASSIFIED

USSR

UDC: 621.791.3

ATAMANOV, V. N., Candidate Technical Sciences; BITSOYEV, G. D.  
and ISAYEV, A. P., Engineers

"Equipment and Technique for Welding Integrated Circuit Leads to  
Printed Circuit Plates"

Moscow, Pribory i sistemy upravleniya, No. 10, 1970, pp 52-54

Abstract: At the present time, solder with a low melting point and flux is used for attaching integrated circuit leads to printed circuit plates in industrial procedures. However, a number of difficulties are involved in this method, and there is a tendency to replace it with better welding processes such as the one proposed in this article. The basic principle here is that the voltage on the welding electrodes is automatically controlled, and the increase or decrease in the cross sections of the elements to be joined are automatically compensated by the increase or decrease in the welding current. The full schematic of the equipment is given in the article together with details of the best use of the method for various materials to be welded. The authors conclude that this new method forms stable joints with nickel printed-circuit leads.

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Foundry

USSR

FILIN, Yu. A., ISAYEV, A. S.

"Casting Production of New Shipbuilding Alloys"

Liteynoye Proizvodstvo Novykh Sudostroyitel'nykh Splavov [English version above], Sudostroyeniye Press, Leningrad, 1971.

FOREWORD: The introduction of new technological processes of casting always requires the training of workers who must master the technology of complex-shape casting of refractory alloys, melted in highly complex vacuum-arc melting units, and must prepare molds of highly refractory materials and graphite.

Before the publication of the first edition of this book, workers were trained by individual preparation in operating shops and sections. This method of training of specialists was insufficiently systematic. With the publication of the first edition of this book, the problem of training workers and foreman according to approved plant programs was largely solved.

In the past two years, intensive development and improvement of the technology of manufacture of complex-shaped castings of alloys based on the refractory metals have introduced many new things to the processes and concepts existing earlier. In contrast to the first edition, the second edition

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FILIN, Yu. A., ISAYEV, A. S., Liteynoye Proizvodstvo Novykh Sudostroyitel'nykh Splavov, Sudostroyeniye Press, Leningrad, 1971.

of this book includes the new chapters "Design of Technological Castings" and "Electrical Equipment and Automatic Equipment for Power Supply and Servicing of Melting-Casting and Heating Furnaces," as well as additional information on mold materials, tap systems, melting technology and the properties of refractory metals and alloys based on them.

Chapters I, II, III and VII were written by Yu. A. Filin, Chapters IV, V and VI -- by A. S. Isayev.

The authors express their gratitude to Doctor of Technical Sciences Professor G. I. Kapyrin, Doctor of Technical Sciences I. V. Gorynin, Candidate of Technical Sciences P. I. Gayday, Candidate of Technical Sciences L. V. Butalov, and also Engineers A. V. Tikhomirov and A. L. Khaykin, Technicians Z. I. Kuptsova and L. M. Yakovleva for their cooperation and help in preparation of the manuscript.

Comments and corrections concerning the book should be sent to: 191065, Leningrad, D-65, Gogalya 8, "Sudostroyeniye" Press.

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USSR

FILIN, Yu. A., ISAYEV, A. S., Liteynoye Proizvodstvo Novykh Sudostroyitel'nykh Splavov, Sudostroyeniye Press, Leningrad, 1971.

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